Fig.1

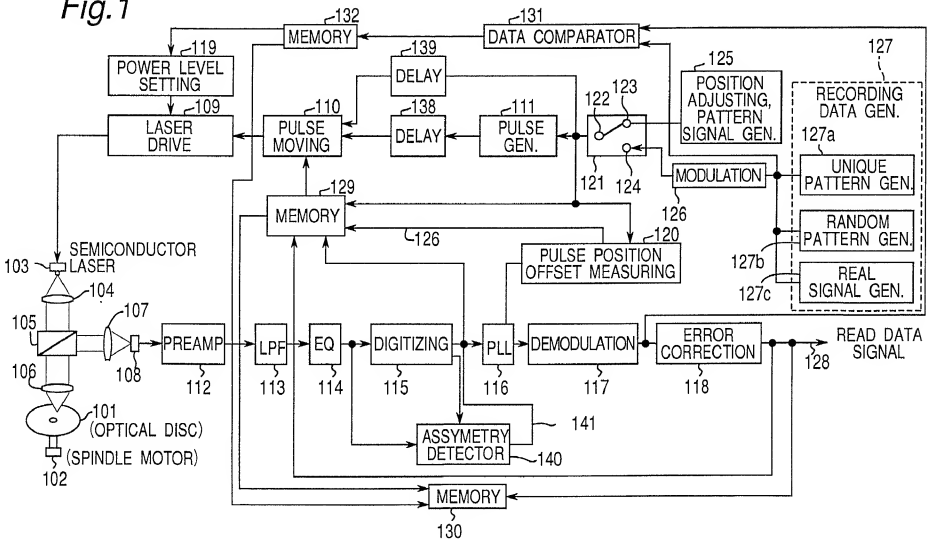

132
MEMORY
131
DATA COMPARATOR
127
119
POWER LEVEL SETTING
139
DELAY
125
POSITION ADJUSTING, PATTERN SIGNAL GEN.
RECORDING DATA GEN.
109
LASER DRIVE
110
PULSE MOVING
138
DELAY
111
PULSE GEN.
122
123
127a
UNIQUE PATTERN GEN.
121
124
MODULATION
129
MEMORY
126
RANDOM PATTERN GEN.
120
PULSE POSITION OFFSET MEASURING
127b
127c
REAL SIGNAL GEN.
SEMICONDUCTOR LASER
103
104
107
105
106
108
PREAMP
LPF
EQ
DIGITIZING
PLL
DEMODULATION
ERROR CORRECTION
READ DATA SIGNAL
112
113
114
115
116
117
118
128
101
(OPTICAL DISC)
(SPINDLE MOTOR)
102
ASSYMETRY DETECTOR
141
140
MEMORY
130

Fig.2

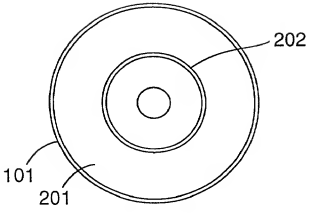


Fig.3

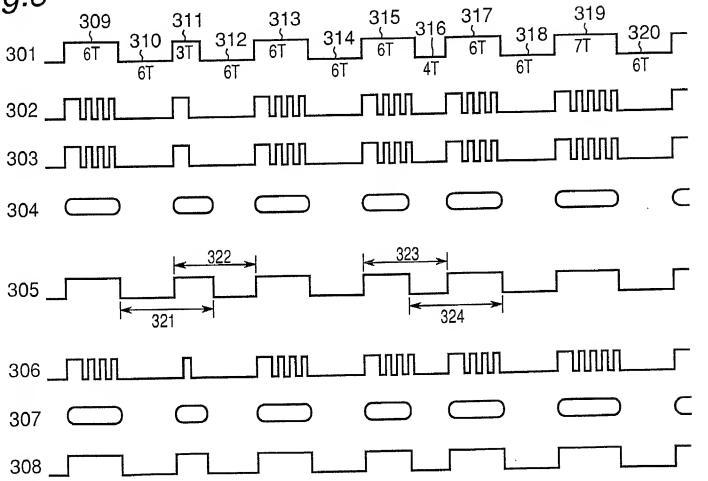


Fig.4

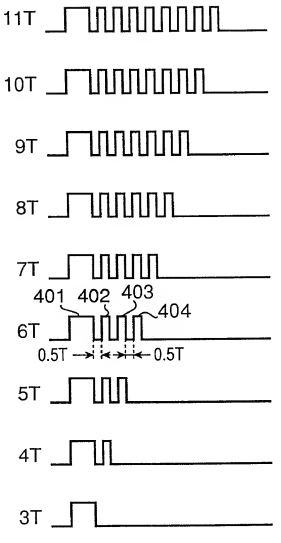


Fig.5A

FIRST PULSE MOVEMENT (TF) / PRECEDING SPACE SIGNAL	MARK SIGNAL ≧5T	MARK SIGNAL 4T	MARK SIGNAL 3T
≧5T	5S5M	5S4M	5S3M
4T	4S5M	4S4M	4S3M
3T	3S5M	3S4M	3S3M

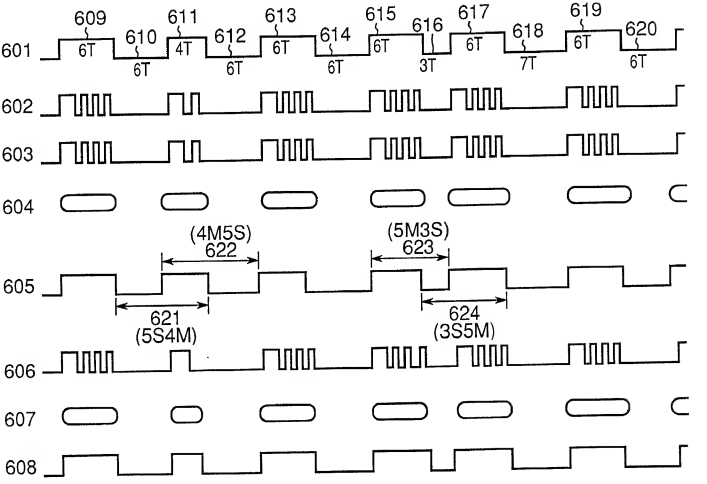
LAST PULSE MOVEMENT (TL) / FOLLOWING SPACE SIGNAL	MARK SIGNAL ≧5T	MARK SIGNAL 4T	MARK SIGNAL 3T
≧5T	5M5S	4M5S	3M5S
4T	5M4S	4M4S	3M4S
3T	5M3S	4M3S	3M3S

Fig.5B

FIRST PULSE MOVEMENT (TF) / PRECEDING SPACE SIGNAL	MARK SIGNAL ≧5T	MARK SIGNAL 4T	MARK SIGNAL 3T
≧5T	5S5MC	5S4MC	5S3MC
4T	4S5MC	4S4MC	4S3MC
3T	3S5MC	3S4MC	3S3MC

LAST PULSE MOVEMENT (TL) / FOLLOWING SPACE SIGNAL	MARK SIGNAL ≧5T	MARK SIGNAL 4T	MARK SIGNAL 3T
≧5T	5M5SC	4M5SC	3M5SC
4T	5M4SC	4M4SC	3M4SC
3T	5M3SC	4M3SC	3M3SC

Fig.6


609
610
611
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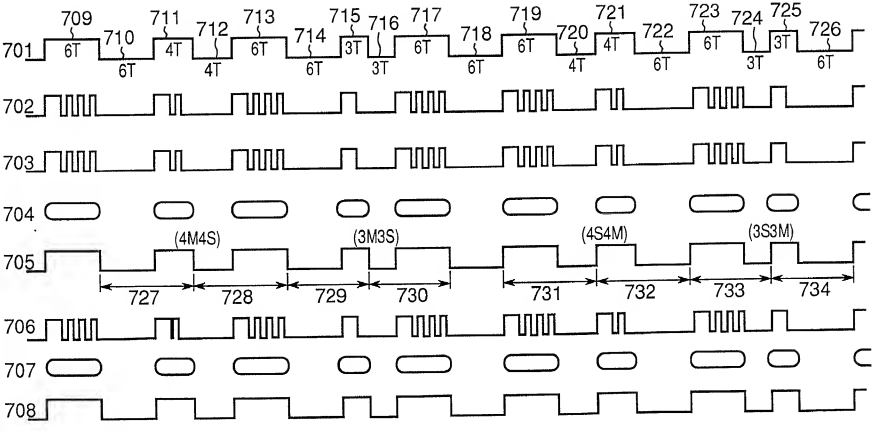
617
618
619
620
601
602
603
604
605
606
607
608
6T
4T
3T
7T
(4M5S)
622
(5M3S)
623
621
(5S4M)
624
(3S5M)

Fig.7


709
710
711
712
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714
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720
721
722
723
724
725
726
6T
4T
3T
701
702
703
704
705
706
707
708
(4M4S)
(3M3S)
(4S4M)
(3S3M)
727
728
729
730
731
732
733
734

Fig.8

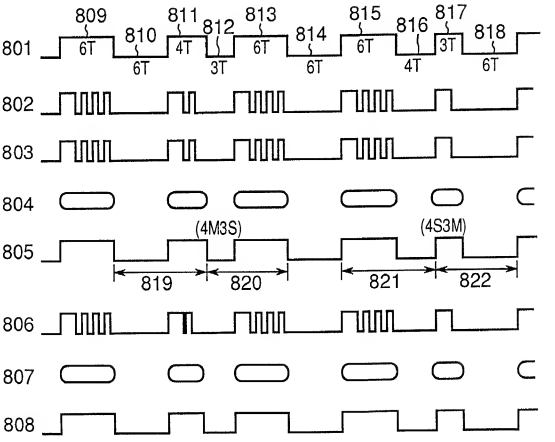

809
810
811
812
813
814
815
816
817
818
801
6T
6T
4T
3T
6T
6T
6T
4T
3T
6T
802
803
804
(4M3S)
(4S3M)
805
819
820
821
822
806
807
808

Fig.9

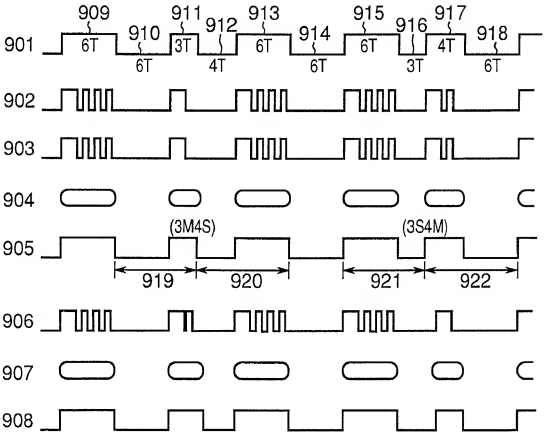

909
911
913
915
916
917
910
912
914
918
6T
3T
4T
6T
6T
6T
3T
4T
6T
901
902
903
904
905
906
907
908
(3M4S)
(3S4M)
919
920
921
922

Fig.10

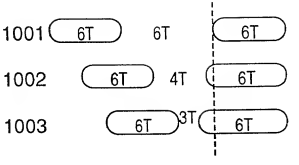

1001
6T
6T
6T
1002
6T
4T
6T
1003
6T
3T
6T

Fig.11

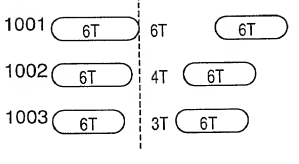

1001
6T
6T
6T
1002
6T
4T
6T
1003
6T
3T
6T

Fig.12

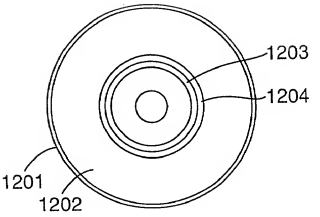


Fig.13

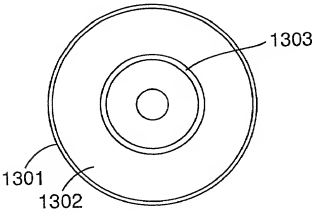


Fig.14

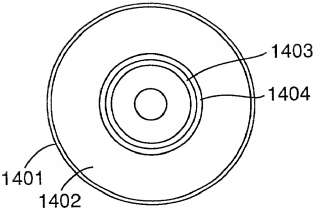


Fig.15

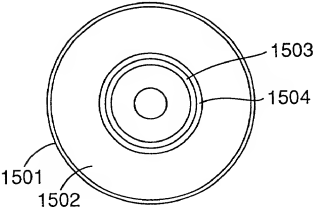


Fig.16

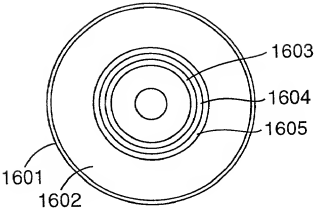


Fig.17

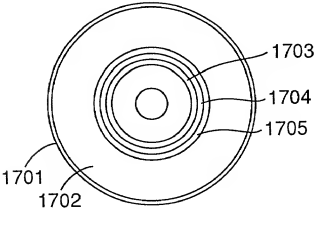


Fig.18

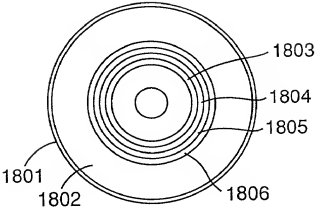


Fig.19

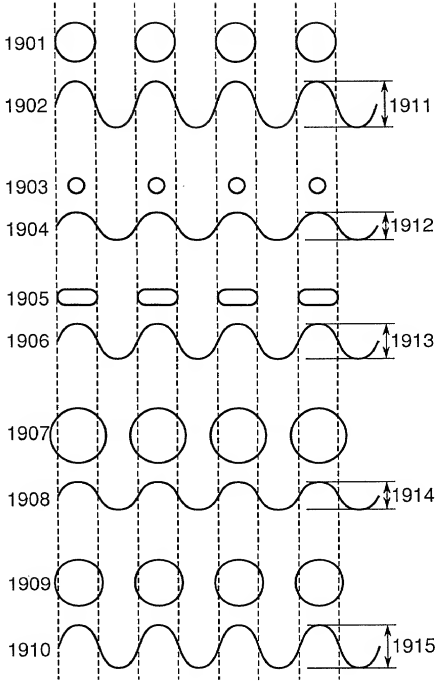

1901
1902
1911
1903
1904
1912
1905
1906
1913
1907
1908
1914
1909
1910
1915

Fig.20A

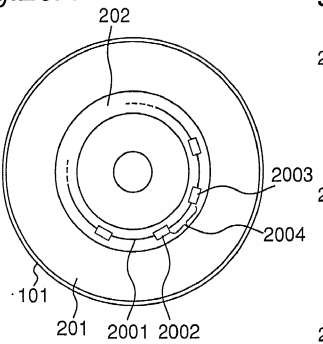


Fig.20B

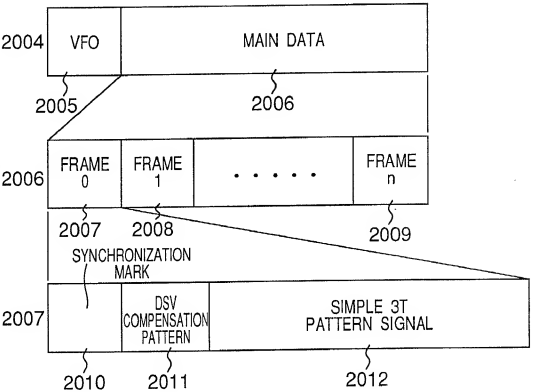


Fig.20C

Fig.21

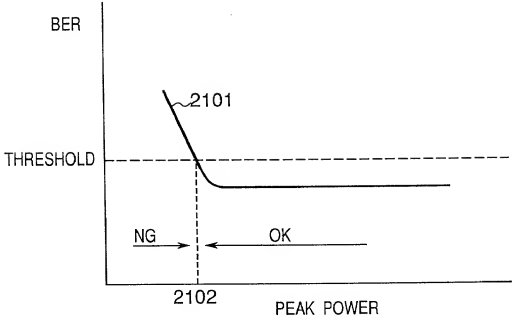

BER
2101
THRESHOLD
NG
OK
2102
PEAK POWER

Fig.22

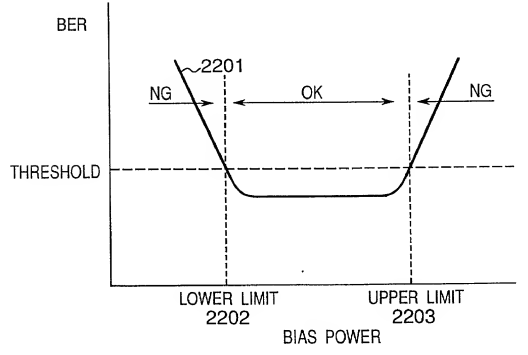

BER
2201
NG
OK
NG
THRESHOLD
LOWER LIMIT
2202
UPPER LIMIT
2203
BIAS POWER

Fig.23

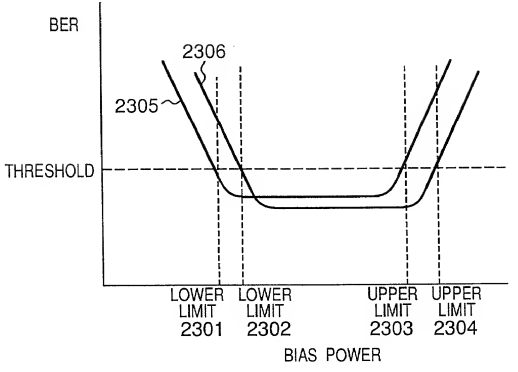

BER
2306
2305
THRESHOLD
LOWER LIMIT 2301
LOWER LIMIT 2302
UPPER LIMIT 2303
UPPER LIMIT 2304
BIAS POWER

Fig.24

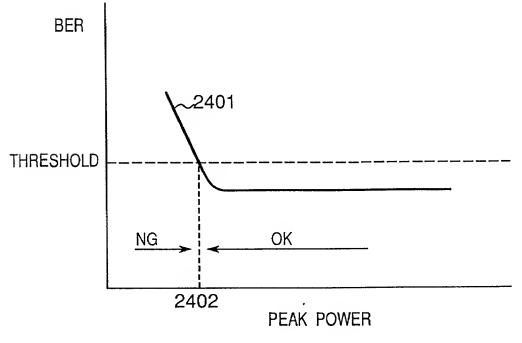

BER
2401
THRESHOLD
NG
OK
2402
PEAK POWER

Fig.25

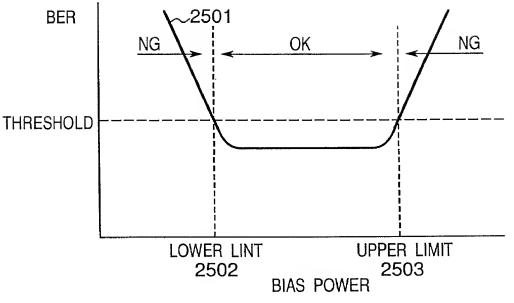


Fig.26

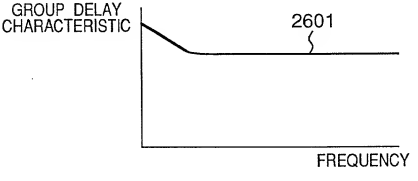


Fig.27

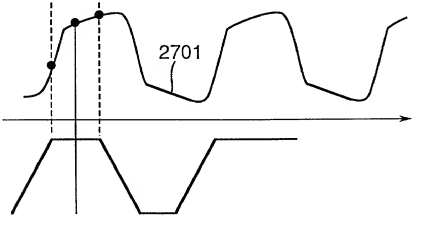


Fig.28A

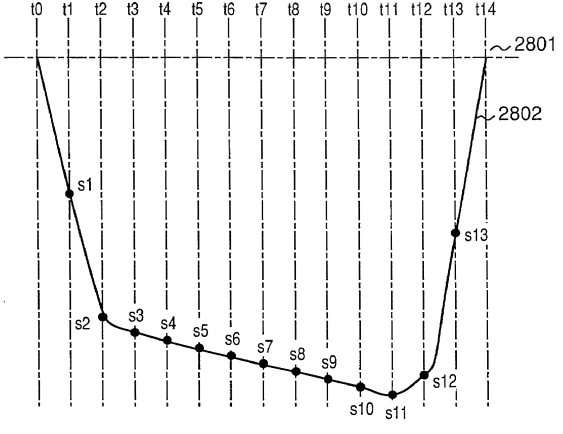


Fig.28B

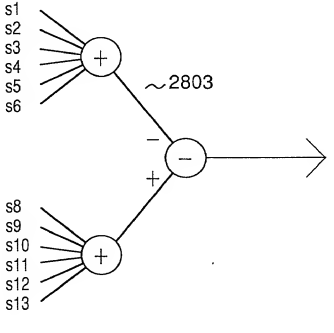


Fig.29A

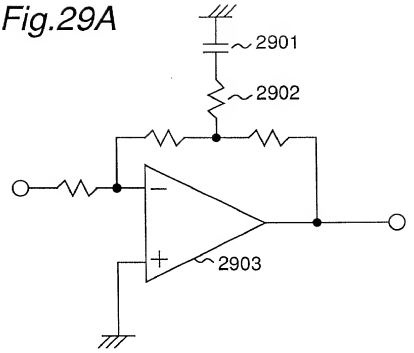


Fig.29B

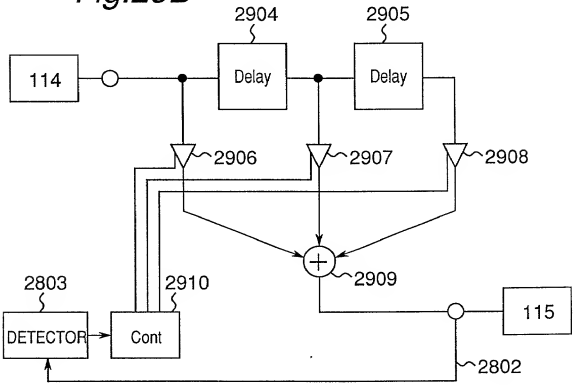


Fig.30

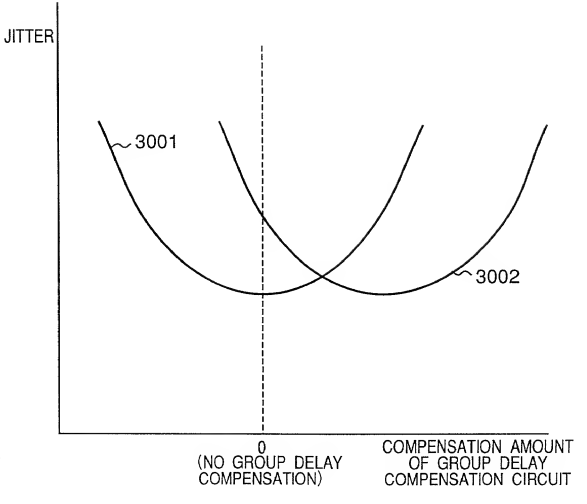

JITTER
3001
3002
0
(NO GROUP DELAY
COMPENSATION)
COMPENSATION AMOUNT
OF GROUP DELAY
COMPENSATION CIRCUIT

Fig.31A

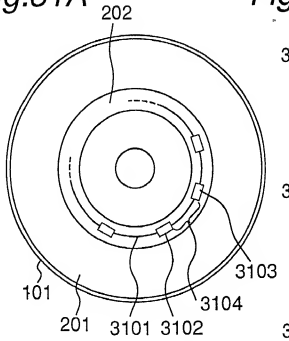


Fig.31B

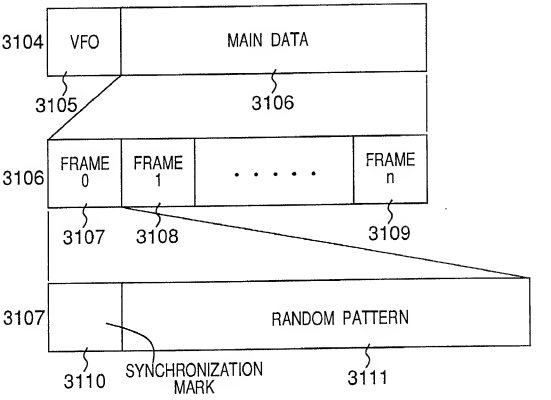


Fig.31C

Fig.32

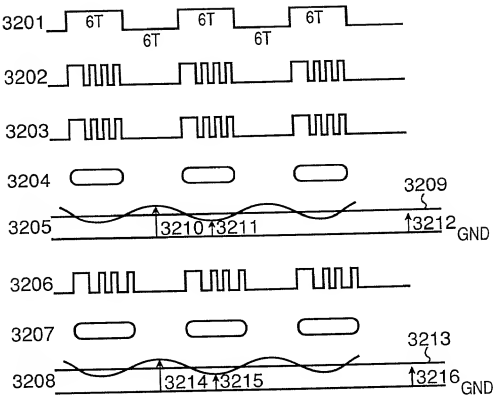

3201
6T
6T
6T
6T
6T
3202
3203
3204
3209
3205
3210
3211
3212
GND
3206
3207
3213
3208
3214
3215
3216
GND

Fig.33

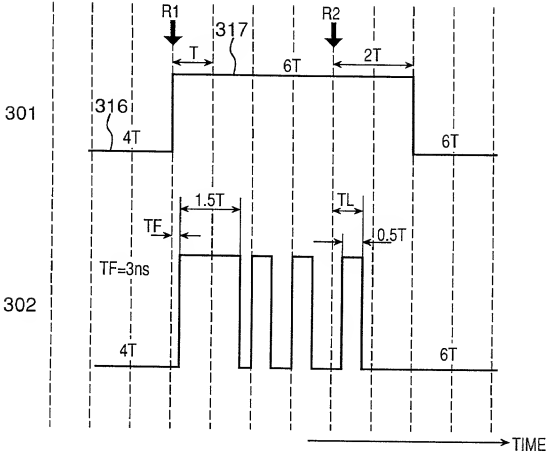


Fig. 34

INSIDE CIRCUMFERENCE SIDE

PIT AREA	INITIALIZATION ZONE	
	CONTROL DATA ZONE	DISC TYPE READ P PULSE ADJUSTMENT METHOD TEMPORARY P INFO (GEN) (PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY) OPERATIONAL P INFO (GEN) (PEAK P, BIAS P, MARGIN CONSTANT) ASYMMETRY (GEN) PULSE POSITION INFO (GEN) DISC SPECIFIC INFO
		REPEAT THE ABOVE FOR FAIL SAFE
MIRROR AREA	CONNECTION ZONE	
RECORDING AREA	GUARD TRACK ZONE 1	
	DISC TEST ZONE 1	
	DRIVE TEST ZONE1	
	RECORDER-SPECIFIC INFO RECORDING ZONE 1	RECORDER-SPECIFIC INFO 1 TEMPORARY P INFO (UNIQUE) (PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY) OPERATIONAL P INFO (UNIQUE) (PEAK P, BIAS P, MARGIN CONSTANT) PULSE POSITION INFO (UNIQUE) (ASYMMETRY) P MARGIN INFO
		RECORDER-SPECIFIC INFO 2 TEMPORARY P INFO (UNIQUE) (PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY) OPERATIONAL P INFO (UNIQUE) (PEAK P, BIAS P, MARGIN CONSTANT) PULSE POSITION INFO (UNIQUE) (ASYMMETRY) P MARGIN INFO
		. . .
		RECORDER-SPECIFIC INFO n TEMPORARY P INFO (UNIQUE) (PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY) OPERATIONAL P INFO (UNIQUE) (PEAK P, BIAS P, MARGIN CONSTANT) PULSE POSITION INFO (UNIQUE) (ASYMMETRY) P MARGIN INFO
		REPEAT THE ABOVE FOR FAIL SAFE
	DISC ERROR MANAGEMENT AREA 1	
	DATA AREA	

Fig. 35

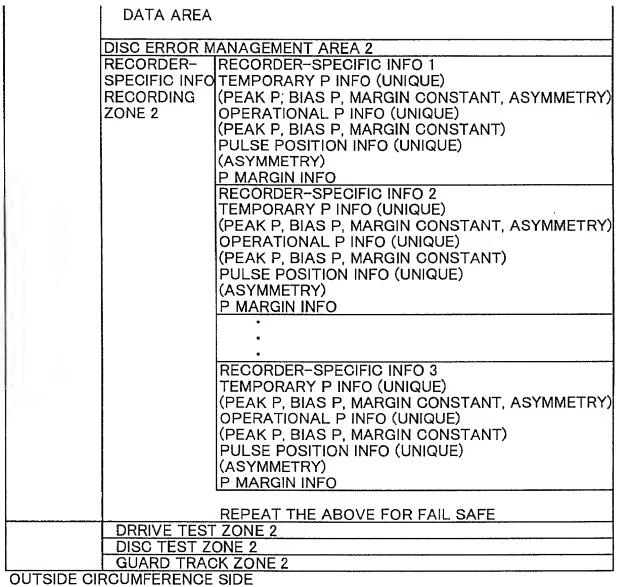

DATA AREA
DISC ERROR MANAGEMENT AREA 2
RECORDER-SPECIFIC INFO RECORDING ZONE 2
RECORDER-SPECIFIC INFO 1
TEMPORARY P INFO (UNIQUE)
(PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY)
OPERATIONAL P INFO (UNIQUE)
(PEAK P, BIAS P, MARGIN CONSTANT)
PULSE POSITION INFO (UNIQUE)
(ASYMMETRY)
P MARGIN INFO
RECORDER-SPECIFIC INFO 2
TEMPORARY P INFO (UNIQUE)
(PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY)
OPERATIONAL P INFO (UNIQUE)
(PEAK P, BIAS P, MARGIN CONSTANT)
PULSE POSITION INFO (UNIQUE)
(ASYMMETRY)
P MARGIN INFO
RECORDER-SPECIFIC INFO 3
TEMPORARY P INFO (UNIQUE)
(PEAK P, BIAS P, MARGIN CONSTANT, ASYMMETRY)
OPERATIONAL P INFO (UNIQUE)
(PEAK P, BIAS P, MARGIN CONSTANT)
PULSE POSITION INFO (UNIQUE)
(ASYMMETRY)
P MARGIN INFO
REPEAT THE ABOVE FOR FAIL SAFE
DRRIVE TEST ZONE 2
DISC TEST ZONE 2
GUARD TRACK ZONE 2
OUTSIDE CIRCUMFERENCE SIDE

Fig.36

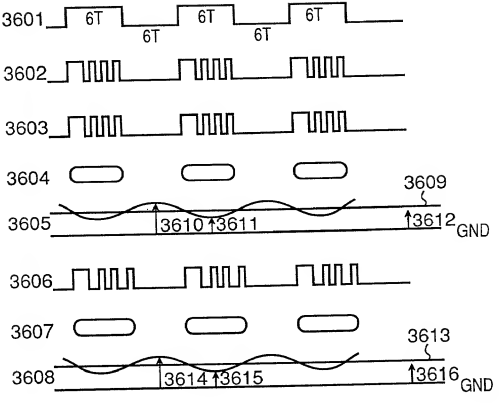
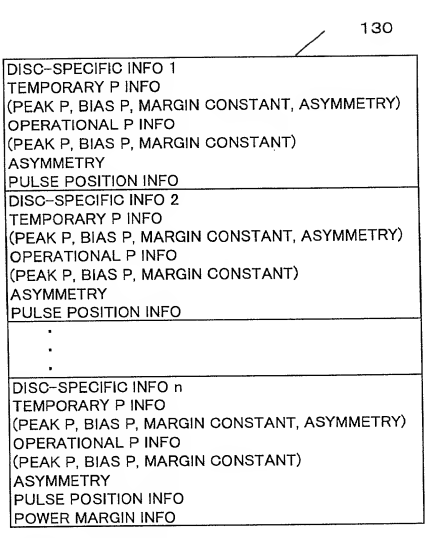

3601
6T
6T
6T
6T
6T
3602
3603
3604
3609
3605
3610
3611
3612
GND
3606
3607
3613
3608
3614
3615
3616
GND

Fig. 37



REPEAT THE ABOVE FOR FAIL SAFE

Fig. 38

	DATA	ADJUSTMENT		1ST/LAST					TEST	RESULT	MEMORY 130				
			SP		TEMP	OP	ASYM	SP			SP	1ST/LAST	TEMP	OP	ASYM
FIG. 2	201		△								△	△	△	△	
FIG.12	1202	1203	△						202		△	△	△	△	
FIG.13	1302			1303					1204		△	△	△	△	
FIG.14	1402	1403		1404											
FIG.15	1502			1503	△	△	△	△	1504		△	△	△	△	△
FIG.16	1602	1603	△	1604	△	△	△		1605		△	△	△	△	△
FIG.17	1702			1703	△	△	△	△	1704	1705—△	△	△	△	△	△
FIG.18	1802	1803	△	1804	△	△	△		1805	1806—△	△	△	△	△	△
	CONTROL DATA ZONE								TEST ZONE	DISC-SPECIFIC INFO RECORDING ZONE					

DATA····· DATA AREA
ADJUSTMENT· AREA FOR RECORDING ADJUSTMENT METHOD WITH EMBOSSED PITS
1ST/LAST····· AREA FOR RECORDING INFO OF MARK START/END POSITIONS WITH EMBOSSED PITS
TEST····· AREA FOR TEST WRITING FOR OBTAINING INFO OF MARK START/END POSITIONS, OPTIMUM POWER, ETC.
RESULT····· AREA FOR RECORDING THE TEST RESULTS
SP····· INFO SPECIFIC TO THE DISC
TEMP····· INFO OF TEMPORARY POWER LEVEL INCLUDING PEAK POWER, BIAS POWER, MARGIN CONSTANT, AND ASYMMETRY FOR USE IN ADJUSTING 1ST AND LAST PULSE POSITIONS
OP····· INFO OF OPERATIONAL POWER LEVEL INCLUDING PEAK POWER, BIAS POWER AND MARGIN CONSTANT FOR USE IN RECORDING DATA IN DATA AREA
ASYM····· INFO OF ASYMMETRY FOR USE IN DETERMINING THE INITIAL POSITION OF 1ST AND LAST PULSES
△····· OPTION